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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/564,282

07/05/2006

Holger Seitz

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EXAMINER

CHAWAN, SHEELA C

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

12/12/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/564,282	Applicant(s) SEITZ ET AL.	
	Examiner SHEELA C. CHAWAN	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/25/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Preliminary Amendment

2. Preliminary amendment filed on 4/20/07 has been entered.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 7/25/06, the information disclosure statement is being considered by the examiner.

Drawings

4. The Examiner has approved drawings filed on 10/9/03.

Claim Objections

5. Claim 11 and 12 are objected to because of the following informalities:

In claim 11, line 1, recites, "Apparatus claim", when claim 1 is directed to method claim.

Similarly claim 12 needs to be corrected.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim(s) 1 – 12 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent¹ and recent Federal Circuit decisions² indicate that a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-12 are rejected under 35 U.S.C. 102(e) as being anticipated by BARTY ET AL; Listed in IDS filed on 7/25/06, (XP-002293092). "Aerial Image Microscopes for

¹ *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

² *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

the Inspection of the defects in EUV masks"; Proceedings of the SPIE; October 2002; pgs. 1073-1084; Vol. 4889; US.

As to claim 1, Bart discloses method for analysis an object in microlithography, comprising the steps of:

providing an aerial image measurement system (AIMS) that consists of at least two imaging (pages 1073- 1074, aerial imaging made and high resolution mode);

detecting the image output of the AIMS (images are detected at the selected line pairs per mm resolution (page 1075) (under satisfying AIM mode requirements);

employing a correction filter to correct the detected image with respect to the transfer behavior of the second or other imaging steps (note, system characterization involves the correction of imaging for AIM).

As to claim 2, Barty discloses the method according to claim 1, further comprising the step of illuminating the object with incident light (note, incident light is implied as part of the imaging system. this may be a specific source of light or ambient light, see (page 1073) AIM made also see satisfying AIM made requirements (page 1075) item 1. also see fig 1, page 1080 system integration options).

As to claim 3, Barty discloses the method according to claim 1, further comprising the step of illuminating the object with transmitted light (note, visible light microscopy use both incident and transmitted light in imaging).

As to claim 4, Barty discloses the method according to claim 1, wherein the image output contains output variables and the correction by the correction filter is carried out in such a way that the corrected output variables of the image correspond to

a photolithography stepper or scanner (page 1073 last paragraph).

As to claim 5, Barty discloses the method according to claim 1, whereby the correction is carried out by an involution (note, the system (AIM) and (EUV) measure and the values are corrected using the value from the calculation of a measured value).

Regarding claim 6, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 5.

Regarding claim 7, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 5).

As to claim 8 Barty, discloses the method according to claim 1, whereby the correction is carried out using an electronic circuit by means of an analog or digital filter or an algorithmic correction by means of software in a digital computer (note, EUV is same as semiconductor (abstract). The method is with regard to inspection and identification of defects in wafer manufacture).

As to claim 9, Barty discloses the method according to claim 1, wherein the object is a mask for manufacturing semiconductors (note, A Microscopes) for the inspection and evaluation of EUV masks consisting of first and second imaging (AIM tool requirements).

Regarding claim 10, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 1.

As to claim 11 Barty discloses the apparatus of claim 9, wherein the first imaging device is selected from the group consisting of EUV imaging optics with mirrors (note, visible light microscope including optical system, page 1080);

EUV imaging optics with zone plates (imaging system uses mirrors);

X- ray imaging optics with mirrors (X-ray imaging optics with zone plates and UV imaging optics with diffractive optics, note Zone plates (page 1077- laser paragraph) page 1082).

As to claim 12 , Barty discloses the apparatus of claim 9, wherein the imaging devices other than the first imaging device are selected from the group consisting of UV imaging optics with diffractive optics (note, visible light microscope including optical system, page 1080); VIS imaging optics with diffractive optics (note, visible light microscope including optical system, page 1080); electron microscope (page 1081); image converter (electron optics consist of means of converting electron into photons(scintillate) elements for image formation(page 1081, also see figure 5 for all types of imaging devices); converter of photons into electrons; fiber optics; camera; micro-lens array on camera or scintillator electron optics consist of means of converting electron into photons(scintillate) elements for image formation(page 1081, also see figure 5 for all types of imaging devices); and amplifier elements (note, amplifier elements , microlens arrays and scintillators are part of these instruments).

Other prior art cited

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dao et al., (US. 5,700,602) discloses method and apparatus for precision determination of phase-shift in a phase-shifted reticule.

Engel et al., (US. 2006/0154150 A1) arrangement for the production of Photo masks.

Spence (US. 7120285 B1) discloses method for evaluation of reticle image using aerial image simulator.

Hemar et al., (US. 7072502 B2) discloses alternating phase-shift mask inspection method and apparatus.

Liu et al., (US. 5789118) discloses method and apparatus for precision determination of phase-shift in a phase-shifted reticle.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is. 571-272-7446. The examiner can normally be reached on Monday - Thursday 7.30 - 6.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on 571-272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sheela C Chawan/

12/6/08

Primary Examiner, Art Unit 2624

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